

WHAT IS CLAIMED IS:

1. A storage system for protecting data on a physical volume at the file system level and permitting access to the data at the physical volume level comprising:

a first interface for file level input/output (I/O);

a second interface for block level I/O;

a plurality of physical volumes upon which logical volumes are represented;

a first controller which processes file level I/O requests; and

a second controller which processes block level I/O requests,

wherein said first and second controllers share protection information for said logical and physical volumes, and

wherein archived data is stored from said first interface and protected at the file system level, is accessed from both said first and second interfaces and is protected whichever interface is being used.

2. A storage system according to claim 1, wherein the plurality of physical volumes permits an appropriate sized file system to be created to store archived data.

3. A storage system according to claim 2, wherein the shared protection information is a volume status table having a plurality of entries which indicate statuses of said physical and logical volumes.

4. A storage system according to claim 3, wherein said entries indicate whether a volume is a logical or physical volume.
5. A storage system according to claim 3, wherein said entries indicate a first status of each volume defining whether the volume is protected or unprotected.
6. A storage system according to claim 3, wherein said entries indicate a second status of each volume defining whether the volume is exported or un-exported.
7. A storage system according to claim 3, wherein said entries indicate a third status of each volume defining a retention period for the volume.
8. A storage system according to claim 8, wherein, after the retention period for the volume is expired, data in the volume can be changed by a request received at said first controller or said second controller.
9. A storage system according to claim 1, wherein said first controller is a network attached storage controller which processes file level I/O requests.

10. A storage system according to claim 1, wherein said second controller is a disk controller network attached storage controller which processes block level I/O requests.

11. A storage system according to claim 1, wherein said first interface is an Ethernet interface which processes file level I/O requests.

12. A storage system according to claim 1, wherein said second interface is a Fibre Channel interface which processes block level I/O requests.

13. A system for protecting data on a physical volume at the file system level and permitting access to the data at the physical volume level comprising:

a network attached storage (NAS) gateway; and

a storage system which is connected to said NAS gateway,

wherein said NAS gateway comprises:

a first interface for file level I/O,

a third interface for block level I/O, and

a first controller which processes file level I/O requests,

wherein said storage system comprises:

a second interface for block level I/O, said second interface being connected to said third interface,

a plurality of physical volumes upon which logical volumes are represented, and

a second controller which processes block level I/O requests,  
wherein said first and second controllers share protection information  
for said logical and physical volumes, and  
wherein archived data is stored from said first interface of said NAS  
gateway to said second interface via said third interface and protected at the  
file system level, is accessed from both said first and second interfaces and is  
protected whichever interface is being used.

14. A system according to claim 13, wherein the plurality of physical  
volumes and which permits an appropriate sized file system to be created to  
store archived data.

15. A storage system according to claim 14, wherein the shared  
protection information is a volume status table having a plurality of entries  
which indicate statuses of said physical and logical volumes.

16. A storage system according to claim 15, wherein said entries  
indicate whether a volume is a logical or physical volume.

17. A storage system according to claim 15, wherein said entries  
indicate a first status of each volume defining whether the volume is protected  
or unprotected.

18. A storage system according to claim 15, wherein said entries indicate a second status of each volume defining whether the volume is exported or un-exported.

19. A storage system according to claim 15, wherein said entries indicate a third status of each volume defining a retention period for the volume.

20. A system according to claim 19, wherein, after the retention period for the volume is expired, data in the volume can be changed by a request received at said first controller or said second controller.

21. A storage system according to claim 13, wherein said first controller is a network attached storage controller which processes file level I/O requests.

22. A storage system according to claim 13, wherein said second controller is a disk controller network attached storage controller which processes block level I/O requests.

23. A storage system according to claim 13, wherein said first interface is an Ethernet interface which processes file level I/O requests.

24. A storage system according to claim 13, wherein said second interface is a Fibre Channel interface which processes block level I/O requests.

25. A storage system for protecting data on a physical volume at the file system level and permitting access to the data at the physical volume level comprising:

- a first interface for file level input/output (I/O);
- a second interface for block level I/O;
- a plurality of physical volumes upon which logical volumes are represented;
- a first controller which processes file level I/O requests; and
- a second controller which processes block level I/O requests,

wherein said first controller changes protection information for said logical and physical volumes to protect data,

wherein the volume storing the protected data is protected from access from said second controller in accordance with the protection information.

26. A storage system according to claim 25, wherein the protection information is a volume status table having a plurality of entries which indicate statuses of said physical and logical volumes.

27. A storage system according to claim 26, wherein said entries indicate a first status of each volume defining whether the volume is protected or unprotected.

28. A storage system according to claim 26, wherein said entries indicate a second status of each volume defining whether the volume is exported or un-exported.

29. A storage system according to claim 25, wherein said first controller is a network attached storage controller which processes file level I/O requests.

30. A storage system according to claim 25, wherein said second controller is a disk controller network attached storage controller which processes block level I/O requests.

31. A storage system according to claim 25, wherein said first interface is an Ethernet interface which processes file level I/O requests.

32. A storage system according to claim 25, wherein said second interface is a Fibre Channel interface which processes block level I/O requests.